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8-4-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Sheng LIANG) Group Art Unit: 2151   **RECEIVED**
)
Application No.: 09/069,088) Examiner: V. Nguyen   JUL 2 9 2003
)
Filed: April 29, 1998)   **Technology Center 2100**
)
For: METHOD, APPARATUS, AND)
ARTICLE OF MANUFACTURE)
FOR TIME PROFILING MULTI-)
THREADED PROGRAMS)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE TO RESTRICTION REQUIREMENT

In a restriction requirement dated July 2, 2003, the Examiner required restriction

under 35 U.S.C. § 121 between claims 1-4, 8-20, 24-31, and 33 (Group I), and claims 5,

6, 21, 22, 28, and 32 (Group II). Applicants provisionally elect to prosecute Group I,

claims 1-4, 8-20, 24-31, and 33 drawn to time profiling multiple threads of a program

with traverse.

This application has been pending for more than five years. The Examiner has

already searched and examined claims 1-33 as a single invention and issued several

Office Actions treating the claims in the two groups without distinction. For example, in

the February 5, 2003 Office Action, the Examiner made no distinction between claims 1-

4 and 5, 6 in rejecting them over the same prior art. The Examiner has already shown

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that the search for subject matter associated with the claims of Group I is related to the search for subject matter associated with the claims of Group II, demonstrating that there is no additional burden in searching claims 5, 6, 21, 22, 28, and 32 along with claims 1-4, 8-20, 24-31, and 33. A restriction now serves no valid purpose.

Furthermore, Applicant traverses the Examiner's position that Groups I and II are distinct subcombinations. To show distinctness, the Examiner must show that one of the subcombinations has utility other than in the disclosed combination. The Examiner asserts that Group I has separate utility from Group II because the latter invention is directed to a method for determining whether a selected thread of execution of a multi-threaded program is running (See Office Action dated July 2, 2003, page 2, paragraph 2). Applicant disagrees.

In reaching the conclusion, the Examiner appears to read just the preamble of the independent claims of each invention, without considering the recitations in the body of the claims. For example, the Examiner has identified Group I as directed to "a method for time profiling multiple threads of execution corresponding to a program," which is the exact language of the preamble of claim 1, and identified Group II as directed to "a method for determining whether a selected thread of execution of a multi-threaded program is running," which is the exact language of the preamble of claim 5. The Examiner, however, cannot merely look at the preamble; he must consider the scope of the subject matter defined by the body of each respective claim when classifying claims. When properly considered, claims 5, 6, 21, 22, 28, and 32 are not distinct from claims 1-4, 8-20, 24-31, and 33.

For instance, claim 1 includes a combination of steps including determining whether register data correspond to a selected thread has changed from a previous interrupt of all of the threads and providing an indication of the change for the selected thread. Claim 5 includes steps that correspond to features similar to those of claim 1, namely the computing, comparing and regarding steps. Although the method of claim 5 regards a selected thread as running based on the comparison between a computed value and register information, that does not make the claim distinct for purposes of a restriction. Instead, these claims are not distinct, but rather vary in scope within a single type of invention. Because independent claims 8, 17, 20, and 24 and claim 21 include recitations similar to claims 1 and 5, respectively, and should all be examined as part of the same application.

In addition to the reasons set forth above, Applicant traverses the Examiner's position that the asserted inventions have different classifications, and that the search required for Group I is not required for Group II.

The Manual of Classification defines class 709 subclass 107 as including subject matter comprising means or steps for dividing processor time of a computer or digital data processing system between multiple executing programs or processes. Class 709 subclass 100 is the parent subclass of subclass 107 and includes subject matter comprising means or steps for administrating over processor or job execution in a digital data processing system. Even if the Examiner was correct (which Applicants do not concede) that the claims of Group II are associated with a method for determining whether a selected thread of execution of a <u>multi-threaded program</u> is running, then

these claims would be still properly classified in class 709 subclass 107, which by definition is directed toward <u>multitasking and time-sharing based systems</u>.

The Manual of Classification is structured in a hierarchical format such that subject matter that meets the definition of a child subclass, also meets the broader definition of any of its parent subclasses (as well as the class definition itself). In other words, subject matter classified in class 709 subclass 107 inherently includes subject matter directed to the definition of class 709 subclass 100, which is a parent subclass of subclass 107. Accordingly, if an independent claim is directed to subject matter that meets the definition of a particular subclass more so than others, these claims should be classified in that subclass, regardless of the parent subclasses related to it.

In this instance, it appears the Examiner's reasons for classifying Groups I and II in class 709 subclasses 107, 100, respectively, do not correspond to the definitions of these subclasses. Claims 1-33 each include and are associated with, among other things, a multi-threaded program. Since the Examiner has used claim 1's multi-threaded features as the criteria for classifying claims 1-4, 8-20, 24-31, and 33 in class 709 subclass 107, he should use the same criteria for classifying claims 5, 6, 21, 22, 28, and 32, which also includes multi-threaded features, in subclass 107 as well.

Based on the foregoing, Applicant respectfully requests that the Examiner withdraw the restriction of claims 1-33 as proposed in the Office Action dated July 2, 2003 and continue the examination of these claims as single invention.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: July 28, 2003

By:_____

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